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The Provision of Medicaid  
Services by Group  
Practitioners

by



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Cathy L. Carlson

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## A. Introduction

This study examines the responses of urban group and solo practitioners to changes in Medicaid pricing policy. Data on Medicaid claims submitted by group and solo practitioners in Los Angeles and San Francisco counties are contrasted for the years 1974, 1976 and 1978. Six specialties are included in the analysis: general and family practice,\* internal medicine, obstetrics-gynecology, pediatrics, general surgery and orthopedic surgery.

Medicaid fee levels were frozen from 1968 through 1972, when a 2.5 percent increase was granted. No further increases were given until September, 1976. Our data are from the first three months of each year observed, thus the 1974 and 1976 data provide information on the consequences of extended price controls.

In 1976, a new fee schedule was instituted, resulting in two types of change in the reimbursement system. Physician-specific price profiles were replaced by a uniform statewide schedule. At the same time, the state increased fee levels. Maternity care fees rose 30 percent, those for primary care services 20 percent and anesthesiology fees 65 percent. Fees for all other services increased 9.5 percent. These increases were applied to statewide averages of the old fees to determine the new uniform levels. The magnitude of the change in fee levels for an individual physician was negatively related to his prior price levels. Physicians with below average fees received increases larger than the percentages above; some physicians with high prior prices may have faced a reduction in fee levels. Thus the fee change affected physicians unequally. This fee schedule remained in effect for the remainder of the study period. The 1978 data allow us to examine the

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\* For the sake of simplicity, the term general practice will be used to refer to general and family practice, which are treated as one specialty.



practice patterns established following the fee increases and to contrast the responses of group with those of solo physicians.

Fee controls play an important role in states' attempt to constrain Medicaid expenditures. Although many aspects of Medicaid policy are dictated by law and regulation, states have considerable freedom in setting payment levels. Several states including New York, Massachusetts, Pennsylvania, Connecticut, Illinois, Ohio and New Jersey, as well as California, have frozen fees or maintained them at levels well below private payments. The effects of these policies on the provision of services to Medicaid patients are therefore of considerable interest.

#### B. Related Research and Summary of Findings

This paper presents an analysis of the practice patterns of group physicians which complements prior research on solo physicians during the same period. Holahan, Sulvetta and Scanlon studied the practice patterns of solo practice physicians over the same period using a statewide sample of California doctors drawn from the same data base.\* They found that physician Medicaid revenues grew substantially between 1974 and 1976, despite the freeze on Medicaid fees during the period. The increases in Medicaid payments resulted primarily from increases in the number of patients seen per physician. Increases in the complexity of services for which physicians billed, increases in the proportion of physicians participating in Medicaid, and the average number of services provided per patient also contributed.

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\* John Holahan, Margaret Sulvetta and William Scanlon, Medicaid Fee Controls and Physician Behavior: Preliminary Evidence from California, Urban Institute Working Paper No. 1250-03, March 1981.





Following the 1976 fee increases, further increases in solo Medicaid revenues were observed, particularly in the primary care specialties which received the largest fee increases. In the year following the fee changes, the number of patients per physician and services per patient rose while participation rates declined and the complexity of services billed changed very little. In 1978, participation rates continued to fall. Patients per physician and services per patient began to decline, but solo physicians still treated more patients than they did in 1976.

The analysis presented in this paper indicates that there were several differences between group and solo practice patterns. Groups differ from solos in the following ways:

- o Group practice Medicaid fees and billed amounts are higher because the services provided are more complex.
- o Group Medicaid practices are larger than solos, and the number of patients seen during the study period increased faster for groups than solos.
- o Groups provide more pathology and radiology services per patient, possibly due to differences in equipment ownership.
- o The number of services per patient fell more for groups than solos following the fee increase in 1976.
- o Groups have higher participation rates than solos, and their rates did not decline between 1976 and 1978.

The primary conclusion of this paper is that although groups provided more expensive services than solos and provided a greater volume of services, they did not differ greatly from solos in their responses to fee policy changes. We find that:

- o both groups and solos expanded the volume of services delivered during the fee freeze, apparently in response to increases in Medicaid eligibility and reductions in private demand.
- o the complexity of services billed increased during the fee freeze for both groups and solos.



- o the 1976 fee increases were followed by increases in participation rates and patient loads for both groups and solos; the increases were larger in the primary care specialties.

### C. Background

This section briefly discusses physician behavior and identifies factors, including fee levels, which influence practice patterns. Because a descriptive analysis cannot isolate the effects of any particular change, it is important to identify coincident changes and consider the probable effects of these changes.

Physicians practicing in areas with patients eligible for public health care programs may be viewed as providing services to two or more separate markets. Although all patients are charged the same price, the physician receives different prices for his services in each market. In the private market the demand for services falls as the price the physician charges rises. In the Medicaid market, however, the volume of services demanded is not related to the physicians' payment because the patient pays nothing.

A physician will in theory not provide services for which he cannot recover his costs. If Medicaid fees do not cover costs a physician is not likely to provide any Medicaid services. An increase in fee levels will enlarge Medicaid volume if an unsatisfied demand for services exists. If costs rise and fees do not, a physician will either see fewer or no Medicaid patients; alternatively, he may change the composition of services to effectively get paid more for his Medicaid services. That is, a physician may change the number and/or mix of services provided, favoring those which produce more revenue. The aggregate mix of services provided will also change if the doctors ceasing Medicaid participation practice differently from those continuing to provide services.



Changes in private demand will affect the provision of Medicaid services. If private demand rises, physicians will reduce their Medicaid service volume in order to take on more, better paying, private patients. A reduction in private demand, conversely, will increase the physicians' willingness to provide Medicaid services.

One major factor influencing private demand is the physician-population ratio. An increase in the physician-population ratio implies that fewer private patients are available to each physician. As Table 1 indicates these ratios rose sharply for internal medicine and pediatrics and quite substantially for obstetrics-gynecology and orthopedic surgery. The relative concentrations of general and family practitioners and general surgeons declined. Physicians in the specialties with increasing ratios should become more willing to serve Medicaid patients.

In addition to the fee controls and subsequent fee increases, two Medicaid policy changes may have affected Medicaid service provision. On July 1, 1975 the prior authorization requirement for physician outpatient services was abolished. The lifting of this restriction may have increased the willingness of physicians to treat Medicaid patients. On July 1, 1976 the California legislature passed a bill simplifying the eligibility requirements for the medically needy and the medically indigent. The new law resulted in an increase in eligibility for these programs and a change in the composition of the population receiving publicly funded health care. Table 2 compares the 1974-1976 and 1974-1978 increases in eligible populations for the various programs.

An increase in the number of eligible patients will increase service volume if physicians are willing to take on additional Medicaid patients. If there is an excess demand for services, an increase in eligibility will not result in an increase in utilization.



Table 1  
Physicians per 100,000 Population  
California, 1974-1978

	<u>1974</u>	<u>1976</u>	<u>Percent Change 1974-1976</u>	<u>1978</u>	<u>Percent Change 1974-1978</u>
General and Family Practice	29.1	27.1	-6.8	25.8	-11.3
General Surgery	10.7	10.4	-2.8	10.6	-1.0
Internal Medicine	17.2	18.0	+4.7	20.7	+20.3
Obstetrics- Gynecology	9.2	9.2	0	10.0	+8.7
Pediatrics <sup>1</sup>	22.0	26.0	+18.2	31.3	+42.3
Orthopedic Surgery	6.1	6.2	+1.6	6.6	+8.2
All Physicians	7.2	7.6	+5.5	8.8	+15.8

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Note: 1. Base population limited to persons less than 19 years old.







Table 2

<u>Program</u>	<u>1974 Population</u>	<u>Percent Increase 1974-1976</u>	<u>Percent Increase 1974-1978</u>
AFDC	1,212,226	10	11
Medically Needy	87,361	50	49
Medically Indigent	186,632	41	120
Disabled	<u>248,219</u>	<u>15</u>	<u>53</u>
Total	1,734,438	19	36



#### D. Description of the Sample

The descriptive analysis presented here is based on provider specific data on provision of Medicaid services in the first calendar quarters of 1974, 1976 and 1978. The unit of observation is a physician or group Blue Shield billing number. For solo doctors there is a one-to-one correspondence between doctors and billing numbers. For group practices, however, the number refers to a group rather than an individual doctor and a single group may have more than one number. The number of doctors per group is unknown.

The sample providers are drawn from the statewide population of those groups and solos who had Blue Shield identification numbers regardless of whether they had Medicaid claims. Physicians usually obtain Blue Shield numbers upon licensure, hence this population includes nearly all California physicians. To facilitate comparison with solos, only single-specialty groups were selected. The solo sample is limited to those doctors who were continuously in practice (whether or not they performed public services) from 1972 to 1978.

The lack of information on individual group practitioners precluded the selection of a group sample which included the same doctors in every year. Through manual inspection of the file, billing numbers were linked with the unique group practices with which they corresponded. For the primary care specialties (general practice, pediatrics, internal medicine and obstetrics-gynecology) billing numbers were included if they were associated with a group which formed in or before 1975 and which existed through 1978. For the two surgical specialties numbers associated with groups which existed in 1972 and continued to exist through 1978 were included.

Table 3 presents the number of solos and unique groups in the sample. The number of groups is further broken down by year of formation. As a result



Table 3

Distribution of Sample by Specialty  
and Type of Practice

	<u>Solos</u>	<u>Groups By Year of Formation</u>		<u>Total Groups</u>
		<u>Prior to 4-1-74</u>	<u>4-1-74 to 12-31-75</u>	
General and Family Practice	253	96	16	112
General Surgery	128	34	0	34
Internal Medicine	247	64	35	89
Obstetrics- Gynecology	49	48	12	60
Pediatrics	36	17	10	27
Orthopedic Surgery	38	34	0	34



of the selection procedure, the number of primary care groups included increases between 1974 and 1976. In addition, the size and composition of individual groups may vary from year to year.

Group practices, in contrast with solo doctors, are heavily concentrated in urban areas. If we were to compare group to solo physicians for the entire state, the differences we report could well be due to differences in location rather than type of practice. To avoid this problem we created samples of group and solo physicians located in Los Angeles and San Francisco counties. The distribution of sample members by specialty and type of practice in San Francisco and Los Angeles relative to the rest of the state is given in Table 4. It should be noted again, that for groups, these figures represent provider numbers rather than unique practices. With the exception of participation rates, all group statistics presented here are computed with reference to provider numbers rather than unique groups; that is, a group may appear more than once in the sample if it has multiple billing numbers.

#### E. Organization of the Paper

For each provider in our sample, we have data on the number of services provided, the average prices for these services and the number of public patients treated. These values were created by aggregating across the individual patient claims linked to each provider number. Services are divided into six procedure groups: hospital visits, office visits, other medicine (immunizations, diagnostic tests), surgery, pathology and radiology. The majority of these services are associated with a number on the California Relative Value scale (CRVS), which provide a measure of the complexity of service. For each type of service we have the provider's average billed





TABLE 4

Distribution of Sample Providers Numbers  
by Location  
(Percent of Total)

	Groups		Solos	
	Metro <sup>1</sup>	Non-Metro <sup>2</sup>	Metro <sup>1</sup>	Non-Metro <sup>2</sup>
General and Family Practice	50.5	49.5	25.0	75.0
General Surgery	50.0	50.0	20.3	79.7
Internal Medicine	49.3	50.7	30.8	69.2
Obstetrics- Gynecology	35.1	64.9	23.6	76.4
Pediatrics	30.8	69.2	18.5	81.5
Orthopedic Surgery	37.3	62.7	20.4	79.6

Note: 1. San Francisco and Los Angeles counties only.  
2. All other counties.



amount, and his average allowed amount (the amount which is publicly reimbursed). Patients are separated by program eligibility -- either Medicaid or Medicare. Patients eligible for both programs are excluded from the Medicaid counts because service provided to them are subject to Medicare payment policy.

The descriptive analysis begins with a look at the overall changes in program expenditures. To highlight the changes over time, values for 1976 and 1978 are expressed as indices, which are simply the ratio of the appropriate value to its 1974 base level. The changes in revenues reflect changes in prices and service intensity, in the number of participating providers and the number of patients per provider, and in the number of services per patient. Each of these components is examined in detail. Although the primary emphasis of this study is on the changes over time, differences between group and solo practice physicians are also reported.

The figures presented in these detailed tables are unweighted means and indexed means for participating providers. Significant differences between the 1974 mean levels for groups and solos are identified. The differences in mean levels (but not the indices) have been tested for 1976 and 1978 as well -- important differences will be mentioned in the text. Procedures not assigned CRVS units were excluded from these calculations to enable analysis of changes in service intensity. Providers who had no services in a specific procedure group were excluded from the calculations for that procedure group. Thus, changes over time may reflect differences in the composition of the pool providing services as well as changes in individual practice patterns.

A second group of tables provides a summary of the components of change in Medicaid payments through the use of weighted means based on all proce-



dures. The weighted means have the advantage of including the effects of any association between service delivery patterns and practice size.

The paper concludes with a discussion of policy implications of these findings.

## Results

### A. Revenues

Medicaid revenues for our sample members increased from \$3.27 million in 1974 to \$4.93 million in 1976 and to \$6.11 million in 1978. Table 5 shows the distribution of revenues by specialty and year. Not surprisingly, the largest share of expenditures is accounted for by general practitioners, who are also most numerous. Expenditures for all physicians rose by 51 percent between 1974 and 1976 and another 24 percent between 1976 and 1978. Increases between 1974 and 1976 were largest for pediatrics and the other primary care specialties -- in part reflecting the inclusion of recently formed groups. Decreases in expenditures were observed for general surgeons and orthopedic surgeons. Between 1976 and 1978, expenditures increased by over 30 percent for pediatricians, obstetricians and general surgeons and by 71 percent for orthopedic surgeons. Increases were much smaller for general practitioners and internists.

Table 6 provides a more detailed look at the changes in revenue on a per patient basis to allow comparison between groups and solos. Revenues per patient in 1974 were greater for group than for solo physicians for all but orthopedic surgeons. Revenues per patient were lowest for general practitioners, highest for general surgeons, and tended to increase with the extent of specialization. Despite the fixed fee schedule, revenues per patient rose for all primary care physicians between 1974 and 1976. In contrast, group general surgeons and solo orthopedic surgeons had reductions in revenues. The



Table 5

Medicaid Revenues (\$000)  
by Specialty

<u>Specialty:</u>	1974 Expenditures	1976 Expenditures (Index)	1978 Expenditures (Index)
General & Family Practice	\$1,382.8	\$2,278.3 (1.65)	\$2,589.5 (1.87)
General Surgery	437.6	385.0 (0.88)	550.2 (1.26)
Internal Medicine	420.2	625.9 (1.49)	742.2 (1.77)
Obstetrics-Gynecology	555.2	901.6 (1.62)	1,177.1 (2.12)
Pediatrics	296.8	591.6 (1.99)	801.5 (2.70)
Orthopedic Surgery	177.7	145.0 (0.82)	249.6 (1.40)
Total for Sample	\$3,270.3	\$4,927.4 (1.51)	\$6,110.1 (1.87)





Table 6

MEDICAID REVENUES PER PATIENT BY SPECIALTY,  
YEAR, AND TYPE OF PRACTICE

	1974 Levels	1976 Indices (1974 = 1.00)	1978 Indices (1974 = 1.00)
Specialty			
<u>General and Family Practice</u>			
Groups	\$30.20	\$1.25	\$1.14*
Solos	28.98	1.35	0.97
<u>General Surgery</u>			
Groups	134.65*	0.87	0.78
Solos	96.31	1.05	1.13
<u>Internal Medicine</u>			
Groups	59.52*	1.36*	1.11*
Solos	45.56	1.21	1.19
<u>Obstetrics and Gynecology</u>			
Groups	78.98	1.39*	1.28*
Solos	74.23	1.03	0.81
<u>Pediatrics</u>			
Groups	40.94	1.31*	1.33
Solos	30.64	1.18	1.69
<u>Orthopedic Surgery</u>			
Groups	62.85	1.04	1.57
Solos	75.44	0.81	1.00

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\*: Group (solo) mean level is significantly higher than the corresponding solo (group) mean level at the 10 percent level or better.



changes were larger in magnitude for groups, with the exception of general practitioners and general surgeons. Revenues per patient increased faster for general practitioners, obstetricians and orthopedic surgeons between 1976 and 1978, but not for the remaining specialties.

The September, 1976 fee schedule imposed uniform statewide fee levels, eliminating inter-physician differentials in rates of payments. The fee increases given were largest for primary and maternal care procedures. Somewhat surprisingly, revenues per patient fell between 1976 and 1978 for all primary care specialties, except for pediatrics where they increased by only 1.5 percent. Revenues per patient also fell for general surgeons but increased for orthopedic surgeons. In 1978, revenues per patient were higher for group than for solo physicians for all but general surgeons.

## B. Prices

We begin our analysis of the changes in components of revenue by looking at prices. The first section discusses the levels and subsequent changes in allowed amounts--the amounts reimbursed by Medicaid. The next section compares service intensity levels with allowed amounts to identify the nature and extent of changes in the composition of services delivered. This comparison allows us to separate changes in allowed amounts into changes in service composition and changes in participation which are correlated with the physician-specific fee levels. A third section on prices focuses on billed amounts. Because physicians appear to bill all patients at the same level, regardless of the source of payment, a comparison of billed amounts and allowed amounts permits us to estimate the savings effected by the freeze on fee levels.



### Allowed Amounts

For any given group of procedures, e.g. surgical procedures or other medicine, the average allowed amount depends on the complexity of services delivered and thus on the specialty of the practitioner performing the service.

Table 7 presents the detailed breakdown of 1974 allowed amounts and the corresponding indices for 1976 and 1978. We see that allowed amounts for group practice are generally higher than those for solos, explaining part of the revenue differentials discussed above. There are several exceptions to this pattern, particularly among obstetricians and orthopedic surgeons.

The most important conclusion to be drawn from Table 7 is that the freeze on fees between 1974 and 1976 did not prevent changes in average allowed amounts. Increases outnumbered decreases and were more frequent in primary care specialties. Because no consistent pattern of change emerges it is useful to examine each specialty individually.

Allowed amounts in general practice rose consistently for all procedure groups except surgery. Surgery prices declined by twenty-six percent for groups and by twenty-three percent for solo physicians, primarily due to a change in the composition of services. The prices of hospital visits, office visits and other medicine rose for both groups and solo physicians with the increases ranging nine to twenty-one percent.

Overall, internists' prices rose slightly, primarily for office and hospital visits. For obstetrician-gynecologists price increases were also concentrated in low-cost procedure groups. Group practice prices generally rose more (or declined less) than those for solos, reinforcing the differentials observed in 1974. Pediatricians' prices rose more than those of any other specialty. Surgery prices quadrupled for groups, presumably due to a



Table 7

MEDICAID AVERAGE ALLOWED AMOUNTS BY SPECIALTY, YEAR,  
TYPE OF PRACTICE, AND PROCEDURE GROUP<sup>1</sup>

	1974 Levels		1976 Indices		1978 Indices	
	Groups	Solos	Groups	Solos	Groups	Solos
			(1974 = 1.00)		(1974 = 1.00)	
<u>Specialty</u>						
<u>General and Family Practice</u>						
Hospital Visits	\$15.2	\$16.0	1.18	1.09	1.39	1.44
Office Visits	9.6	9.9	1.21	1.19*	1.44	1.41
Other Medicine	5.8	6.7	1.12	1.13*	1.47	1.34
Surgery	62.4*	61.8	0.74	0.77	0.80	0.81
Pathology	5.0*	3.8	0.94*	1.18	1.14*	1.37
Radiology	16.5*	14.9	1.01*	1.03	1.15*	1.15
<u>General Surgery</u>						
Hospital Visits	15.7	14.5	0.87	1.12*	1.25*	1.45
Office Visits	13.3	12.2	1.06	1.22	1.38*	1.34
Other Medicine	24.1	21.3	0.93	1.14	1.09	1.27
Surgery	208.8*	161.1	0.70	0.96	0.80	1.08
Pathology <sup>2</sup>	6.1	4.4	0.94	1.02	0.89	1.41
Radiology <sup>2</sup>	----	----	----	----	----	----
<u>Internal Medicine</u>						
Hospital Visits	15.3	15.9*	1.05	1.04	1.25	1.26
Office Visits	12.2	13.2*	1.06	1.01	1.25	1.24
Other Medicine	22.5	19.2	0.88	0.99	1.08	1.12
Surgery	40.4*	38.0	1.00*	0.95	1.21	1.53
Pathology	5.6*	4.5	0.98*	1.02	1.02	1.22
Radiology	17.0	16.1	0.93	1.01	1.10	1.25
<u>Obstetrics and Gynecology</u>						
Hospital Visits	15.6	20.1*	1.26	1.07	1.49	1.13
Office Visits	15.0	15.8	1.13	1.15	1.53	1.34
Other Medicine	11.3	11.0	1.01	0.90	1.14	1.14
Surgery	138.1	152.5	1.08	1.01	1.22	1.01
Pathology <sup>2</sup>	4.0	4.2	1.10	1.07	1.55	1.40
Radiology <sup>2</sup>	----	----	----	----	----	----
<u>Pediatrics</u>						
Hospital Visits	22.4	20.5	0.92	1.03	1.11	1.38*
Office Visits	12.6	11.6	1.16	1.31	1.21	1.51*
Other Medicine	10.8	7.0	0.80*	0.97	1.02*	1.40
Surgery	13.6*	23.0	4.14*	0.62	4.35*	0.96
Pathology <sup>2</sup>	4.3*	3.4	0.93	1.09	0.93	1.21
Radiology <sup>2</sup>	----	----	----	----	----	----
<u>Orthopedic Surgery</u>						
Hospital Visits	11.6	12.8	1.15	1.09	1.30	1.38
Office Visits	13.6	14.0*	1.07	1.03	1.26	1.26
Other Medicine	16.9	23.2*	1.44	0.90	1.65	1.13
Surgery	95.0	119.3	0.72	0.95	1.11	0.94
Pathology <sup>2</sup>	----	----	----	----	----	----
Radiology	15.1	15.7	0.99	1.01	1.18	1.28*

- NOTE:
1. Asterisks indicate that the group (solo) mean level is significantly higher than the corresponding solo (group) mean level at the 10 percent level or better.
  2. Dashes indicate a category with less than 25 providers.





change in the mix of services. Increases for other pediatricians' services were more evenly distributed across procedure groups, with the largest increases occurring in office visit prices.

For general surgeons, the only consistent increase in fees was for office visits. The average price of surgery services, clearly the most important for this specialty, declined more severely for group than for solo physicians. The price changes for orthopedic surgeons resembled those for general surgeons with large decreases in surgical prices outweighing the small increases for other procedures.

In summary, prices did increase in spite of the freeze on fees. The majority of the increases were concentrated in primary care specialties and in low-cost procedure groups. The one procedure group consistently exhibiting price increases was office visits.

The September, 1976 fee increases are clearly evident in the 1978 indices. The amounts allowed for hospital and office visits show the largest increases relative to 1974 levels, reflecting the preferential increases given to primary and maternity care services (twenty and thirty percent respectively). Average prices for these services were, with a few exceptions, between twenty-five and fifty percent higher than the 1974 averages. As in the 1974-76 period, there were changes in fees which were both greater and less than those which could be explained on the basis of the fee schedule alone.

Overall, increases in allowed amounts were largest in general practice, pediatrics and internal medicine. This is true for the 1974-76 period as well as for 1976-78. Payment policy alone does not fully explain the price changes in either period. We, therefore, look to changes in service composition as a source of change in allowed amounts.



### Service Intensity

We investigated the role of changes in service composition in explaining changes in allowed amounts by examining levels and changes in the average number of California Relative Value scale (CRVS) units per service for three procedure groups. Means were computed for hospital visits, office visits and surgery procedures by specialty and practice mode.

If physicians increased the complexity of services delivered during the study period, average allowed amounts would show increases not attributable to fee changes. The end result would be the same if physicians simply exaggerated the complexity of services rendered when billing the State. Our data does not allow us to distinguish between these two sources of change.

Table 8 presents mean and indexed service intensity levels for the study period. The levels of service intensity tended to be higher for solo physicians than for groups, though the differences were not always statistically significant. The 1976 indices indicate that changes in service intensity did occur during the study period. Between 1974 and 1976, the complexity of both hospital and office visits increased. In most specialties office visit intensity grew faster than that for hospital visits. The reverse is true for general surgeons and internists. There were large declines in the complexity of surgery services for most practitioners. The most extreme change was in surgery services performed by pediatric groups, where a 358 percent increase in intensity took place, explaining the large increase in allowed amounts noted above.

Between 1976 and 1978 further increases in intensity were typically observed for hospital and office visits. Surgery intensities continued to fall for general practitioners, general surgeons, and obstetricians-gynecologists. In the remaining specialties the trend was reversed and surgery



Table 8

MEDICAID SERVICE INTENSITY BY SPECIALTY, YEAR,  
TYPE OF PRACTICE, AND PROCEDURE GROUP<sup>1</sup>

	1974 Levels		1976 Indices		1978 Indices	
	Groups	Solos	Groups	Solos	Groups	Solos
			(1974 = 1.00)		(1974 = 1.00)	
<u>Specialty</u>						
<u>General and Family Practice</u>						
Hospital Visits	28.1	30.0	1.21	1.04	1.11	1.15*
Office Visits	18.0	18.5	1.12	1.12	1.14	1.15
Surgery	120.5	106.6	0.70	0.77	0.62	0.65
<u>General Surgery</u>						
Hospital Visits	28.2	25.9	0.87	1.08	1.03	1.22
Office Visits	25.5*	21.6	0.91	1.18	1.12	1.19
Surgery	398.9*	307.8	0.65	0.95	0.68	0.89
<u>Internal Medicine</u>						
Hospital Visits	27.2	27.6*	1.02	1.03	1.03	1.07*
Office Visits	21.1	23.8*	1.05	0.96	1.06	1.04*
Surgery	77.4	84.4	1.04	0.88	1.06	1.24
<u>Obstetrics and Gynecology</u>						
Hospital Visits	29.4	42.9*	1.15	1.01*	1.19	0.78
Office Visits	30.2	32.3	1.02	1.03	1.19	1.04
Surgery	261.6	298.9	1.08	0.97	0.98	0.80
<u>Pediatrics</u>						
Hospital Visits	40.9	40.7	0.92	1.08*	0.89	1.05*
Office Visits	22.4	21.7	0.99*	1.17*	1.00	1.24*
Surgery	23.6	44.9	4.58*	0.60	4.03	0.96
<u>Orthopedic Surgery</u>						
Hospital Visits	21.6	23.4	1.06	1.00	1.04	1.10
Office Visits	24.5	26.3*	1.02	0.94	1.05	0.99
Surgery	154.3	273.1	0.84	0.55	1.06	0.69

NOTE: 1. Asterisks indicate that the group (solo) mean level is significantly higher than the corresponding solo (group) mean level at the 10 percent level or better.



intensities rose. The 1978 levels were, however, below those of 1974 in all specialties except internal medicine and pediatrics.

To address the issue of whether changes in service intensity accounted for the changes in allowed amounts not explained by fee policies we divided the 1976 and 1978 indices of allowed amounts by the corresponding service intensity indices. This procedure allows us to control for changes in service composition and indirectly estimate the changes in allowed amounts for a "fixed" combination of services. If complexity-adjusted payments did not change during the fee freeze, these ratios for 1976 should have values close to 1.00. The ratios for 1978 will, of course, include the effects of the fee increases given in September, 1976. These ratios are presented in Table 9.

We can draw two conclusions from the 1976 ratios. First, changes in service intensity account for a large proportion of the changes in average allowed amounts - the 1976 ratios are much closer to 1 than the allowed amounts indices presented in Table 7. The 1978 ratios for hospital and office visits range from 1.2 to 1.3, highlighting the fee increases for primary and maternity care. The second conclusion is that providers with lower than average fee schedules were more likely to stop providing Medicaid services during the fee freeze. This conclusion is based on the observation that, even after adjusting for service complexity, 1976 allowed amounts were higher than those for 1974. These increases could have resulted only from a rise in the average fees schedule levels of participants. It should be noted that the new groups joining the sample between 1974 and 1976 were assigned fees equal to the average for existing groups. Thus, the changes in allowed amounts during this period slightly underestimate the decline in participation by low-fee-schedule groups.





Table 9

Ratios of Average Change in Allowed  
Amounts to Average Change in Service Intensity

<u>Specialty:</u>	1976 Ratios		1978 Ratios	
	Groups	Solos	Groups	Solos
General and Family Practice				
Hospital Visits	1.00	1.05	1.28	1.26
Office Visits	1.09	1.09	1.27	1.26
Surgery	1.04	1.10	1.27	1.37
General Surgery				
Hospital Visits	1.06	1.10	1.28	1.26
Office Visits	1.14	1.09	1.21	1.23
Surgery	1.06	1.00	1.16	1.19
Internal Medicine				
Hospital Visits	1.09	1.09	1.28	1.26
Office Visits	1.11	1.09	1.30	1.25
Surgery	0.95	0.92	1.12	1.05
Obstetrics-Gynecology				
Hospital Visits	1.11	0.94	1.26	1.29
Office Visits	1.22	1.17	1.42	1.35
Surgery	1.00	1.00	1.25	1.22
Pediatrics				
Hospital Visits	1.04	0.90	1.30	1.24
Office Visits	1.24	1.13	1.28	1.23
Surgery	0.99	0.99	1.19	0.97
Orthopedic Surgery				
Hospital Visits	1.11	1.14	1.28	1.30
Office Visits	1.11	1.11	1.27	1.28
Surgery	1.10	1.44	1.23	1.13



### Billed Amounts

In this final section on prices we compare the levels and changes in allowed amounts to those for billed amounts. The billed amounts provide information on the changes in price faced by private patients and indirectly indicate changes in the costs of providing medical services. The primary question of interest is how did the freeze and subsequent fee increases change the ratio of Medicaid fees to private fees? Substantial declines in the relative prices of Medicaid services would (ceteris paribus) cause decreases in the volume of Medicaid services delivered.

As Table 10 indicates, Medicaid payment levels were well below private levels at the beginning of the study period. Medicaid paid between 56 and 91 percent of private charges. Relative reimbursements were highest for office visits and lowest for surgery services. Reimbursement rates were generally higher for solo practitioners. Pediatricians had the highest Medicaid reimbursement rates relative to their private rates and orthopedic surgeons the lowest.

Between 1974 and 1976 private prices rose substantially faster than Medicaid allowed amounts. This difference in growth rates led to a substantial decline in the proportion of billed charges reimbursed by Medicaid. The disparity between allowed and billed amounts increased most for surgical services, with the proportions reimbursed by Medicaid falling to less than half the billed amounts for general surgeons, obstetricians-gynecologists and orthopedic surgeons. Declines in allowed relative to billed amounts were also large for hospital visits, office visits and other medical services. The proportions reimbursed by Medicaid were generally lower for groups than solo practitioners, except for pathology services where the reverse is true.



TABLE 10

Ratios of Average Allowed Amounts to Average Billed Amounts  
by Specialty, and Type of Practice  
(Proportion of Billed Amount Reimbursed by Medicaid)

Specialty:	1974 Ratios		1976 Ratios		1978 Ratios	
	Groups	Solos	Groups	Solos	Groups	Solos
General and Family Practice						
Hospital Visits	.73	.77	.64	.65	.67	.71
Office Visits	.81	.84	.65	.74	.68	.74
Other Medicine	.72	.77	.63	.67	.59	.66
Surgery	.63	.68	.51	.56	.46	.48
Pathology	.74	.73	.62	.68	.64	.61
Radiology	.71	.78	.63	.70	.63	.67
General Surgery						
Hospital Visits	.67	.72	.55	.62	.64	.63
Office Visits	.76	.79	.62	.68	.67	.70
Other Medicine	.75	.74	.66	.66	.61	.60
Surgery	.57	.61	.45	.43	.41	.43
Pathology	.68	.56	.72	.57	.62	.65
Radiology <sup>1</sup>	-	-	-	-	-	-
Internal Medicine						
Hospital Visits	.76	.71	.56	.63	.62	.62
Office Visits	.76	.75	.60	.60	.59	.61
Other Medicine	.71	.69	.58	.58	.60	.53
Surgery	.67	.67	.53	.64	.57	.61
Pathology	.67	.75	.63	.63	.60	.61
Radiology	.69	.78	.61	.62	.61	.61
Obstetrics-Gynecology						
Hospital Visits	.74	.80	.71	.74	.85	.63
Office Visits	.87	.86	.73	.73	.79	.76
Other Medicine	.66	.73	.53	.56	.46	.54
Surgery	.61	.65	.48	.44	.50	.45
Pathology	.78	.82	.69	.58	.72	.77
Radiology <sup>1</sup>	-	-	-	-	-	-
Pediatrics						
Hospital Visits	.80	.84	.68	.68	.70	.74
Office Visits	.89	.91	.74	.83	.73	.81
Other Medicine	.77	.82	.65	.69	.59	.63
Surgery	.56	.77	.59	.62	.48	.57
Pathology	.83	.64	.67	.61	.63	.60
Radiology <sup>1</sup>	-	-	-	-	-	-
Orthopedic Surgery						
Hospital Visits	.64	.67	.53	.57	.56	.64
Office Visits	.77	.75	.62	.61	.60	.57
Other Medicine	.61	.62	.53	.51	.54	.56
Surgery	.60	.53	.43	.41	.40	.34
Pathology <sup>1</sup>	-	-	-	-	-	-
Radiology	.73	.65	.56	.60	.59	.60

Note: <sup>1</sup>. Dashes indicate category with fewer than 25 providers.



We turn now to an examination of the 1978 ratios. The proportions of billed charges reimbursed by Medicaid for office visits, hospital visits and pathology services are generally higher than those for 1976, indicating that allowed amounts for these procedures rose faster than billed amounts between 1976 and 1978. The proportions reimbursed declined for other medicine and surgery services. Over the four year period billed amounts rose faster than allowed amounts in nearly all procedure groups, so the 1978 proportion reimbursed are, for the most part, lower than those for 1974. The decline in allowed relative to billed amounts were larger for groups than solo practitioners.

In summary, the effect of the fee freeze outweighed that of the fee increases, resulting in a decline in allowed amounts relative to private prices. Between 1974 and 1976, Medicaid allowed amounts declined substantially relative to billed charges. This was particularly true for surgical procedures and office visits. Allowed amounts deteriorated more relative to billed amounts for groups than for solo physicians. The increase in fees that accompanied the introduction of the fee schedule resulted in increases in allowed amounts which were greater than the increases in billed charges during the period. Reimbursement rates, however, were lower relative to billed amounts in 1978 than they were in 1974. We have seen that the intensity of services provided increased over time for hospital visits and office visits. The complexity of surgical procedures on average declined, particularly in general practice, general surgery, and obstetrics-gynecology. Average allowed amounts adjusted for changes in service intensity rose because providers with low fee schedules stopped providing services more frequently than providers with high fee schedules.





### C. Quantities

Our analysis of the changes in the quantity of Medicaid services provided focuses on service provision at three levels: the number of services per patient, the number of patients per provider and the participation rates of providers. Changes in the number of services per patient are of particular interest because of the influence of physicians over patients' utilization decisions. Physicians may have reacted to the fee controls by advising their patients to accept additional and, perhaps, unnecessary services. Alternatively, physicians may have reduced the number of Medicaid patients served, or simply refused to treat Medicaid patients. The 1978, post-fee-increase data enables us to make a "before and after" comparison which will highlight the change in service patterns.

#### Services per Patient

Services per patient are reported using the same format as in the previous tables. As for the price data, providers not performing a specific procedure were excluded when calculating the means and indices for that procedure. This technique allows us to make comparisons between changes in service intensity and service counts. Adding these service counts across procedures, will however, overcount the total number of services per patient. Aggregate statistics which are unbiased are presented later in this paper.

The 1974 service counts presented in Table 11 show that services per patient varied between group and solo physicians. Group practitioners had higher rates of service per patient than solo physicians. To some extent, these differences probably reflect variations in the source of claims rather than in the actual numbers of services provided. Our data exclude information on services ordered by a sample physician, but performed by a third party,



Table 11

MEDICAID SERVICES PER PATIENT BY SPECIALTY, YEAR,  
TYPE OF PRACTICE, AND PROCEDURE GROUP<sup>1</sup>

Specialty	1974 Levels		1976 Indices		1978 Indices	
	Groups	Solos	Groups	Solos	Groups	Solos
			(1974 = 1.00)		(1974 = 1.00)	
<u>General and Family Practice</u>						
Hospital Visits	0.45	0.74	0.56	0.68*	0.47	0.92*
Office Visits	1.47	1.49	1.22	1.25*	0.96	1.01*
Other Medicine	0.72	0.72*	0.93	1.18*	0.64	0.79*
Surgery	0.09	0.14*	1.22	1.14	0.89	1.07*
Pathology	0.43	0.46	1.40	1.43	1.26	1.00
Radiology	0.20	0.17	1.20	1.24	0.95	1.18
<u>General Surgery</u>						
Hospital Visits	0.54	0.58	1.63	1.00	0.76	1.12
Office Visits	0.87	0.87	1.21	1.11	1.08	1.26
Other Medicine	0.37	0.40	1.38	1.10	1.41	1.00
Surgery	0.52*	0.52	0.98*	1.04	0.81*	0.98
Pathology <sub>2</sub>	0.69*	0.30	1.70*	1.13	1.36*	0.87
Radiology <sub>2</sub>	----	----	----	----	----	----
<u>Internal Medicine</u>						
Hospital Visits	1.67	1.96	1.22	0.92	0.78	0.85
Office Visits	1.16	1.24	1.53	1.34	1.04	1.02
Other Medicine	0.93	0.64	1.01	1.28	0.77	1.11
Surgery	0.11	0.17	1.18*	0.82	1.09*	0.82
Pathology	1.36	1.10	1.49*	1.11	0.95*	0.84
Radiology	0.30	0.34	1.20	1.00	0.87	0.68
<u>Obstetrics and Gynecology</u>						
Hospital Visits	0.11	0.11	0.82	3.36	0.82	1.36
Office Visits	0.92	0.91	0.97	1.01	0.76	0.80
Other Medicine	0.14	0.13	0.93	1.38	0.93	0.77
Surgery	0.45	0.47	1.16	0.87	1.02	0.85
Pathology <sub>2</sub>	0.64	0.96	1.48	0.97	0.95	0.63
Radiology <sub>2</sub>	----	----	----	----	----	----
<u>Pediatrics</u>						
Hospital Visits	0.51	0.61	0.63	0.72	0.65	0.54
Office Visits	1.40	1.55	1.11	1.01	1.01	0.86
Other Medicine	0.86	0.74	0.92	1.18	0.77	1.26
Surgery	0.02*	0.04	6.00*	1.00	3.50	0.50
Pathology <sub>2</sub>	0.95*	0.46	0.94*	1.11	0.60	0.78
Radiology <sub>2</sub>	----	----	----	----	----	----
<u>Orthopedic Surgery</u>						
Hospital Visits	0.64	0.73	0.95	1.12	0.78	0.86
Office Visits	0.99	1.00	1.24	1.09*	1.07	1.24*
Other Medicine	0.17	0.28	0.94	1.00*	1.41	2.21*
Surgery	0.40	0.43	1.15	1.07	1.33	1.12
Pathology <sub>2</sub>	----	----	----	----	----	----
Radiology	0.86	0.86	1.10	1.19	1.08	0.88

- NOTES: 1. Asterisks indicate that the group (solo) mean level is significantly higher at the 10 percent level or better.  
2. Dashes indicate a category with less than 25 providers.



such as an independent laboratory. Hence, the differences between groups and solos may reflect the ownership of laboratory or radiological equipment and not necessarily differences in the provision of services.

The distribution of services across procedure groups varies by specialty. Internists provided more hospital visits per patient than any other service. In all other specialties, office visits were provided most frequently, the averages ranged from 0.7 to 1.55 visits per patient. General surgeons performed the most surgery procedures, followed closely by obstetrician-gynecologists and orthopedic surgeons. In general practice and pediatrics, physician visits, other medicine and pathology services predominated. There were few significant differences between group and solo physicians.

The 1976 indices, also shown in Table 11, indicate that doctors did respond to the fee freeze by providing more services per patient. Office visits frequencies increased in every specialty with the exception of group obstetricians. Because office visit intensities also increased during this period, office visits provided a growing source of revenue during the fee freeze. In general, increases in office visits were greater for groups than for solo physicians. There were marked increases in surgery for all group practitioners, except for general surgeons who provided fewer surgery services. Again with the exception of general surgeons, the provision of surgical services increased faster for group than for solo physicians. Hospital visits and other medicine services per patient each fell for four of the six specialty groups. Increases in pathology and radiology are evident in all specialties and are particularly large in general practice.

A comparison of the 1976 and 1978 indices yields evidence of general decline in service per patient rates between the two years. In almost every category, doctors provided fewer services per patient in 1978 than in 1976.



This was true for both group and solo physicians. In addition, in a good many cases, the 1978 indices are less than one, indicating that service rates were lower in 1978 than in 1974. The decreases were largest in general practice, internal medicine and pediatrics. Orthopedic surgeons had increases in services, particularly in the surgery and other medicine categories.

In summary, the fee increases resulted in a decline in the number of services provided per patient, particularly in the specialties which benefited most from the policy change. This change could well reflect the fact that the fee increase raised the value of a physician's time, and indirectly, his costs.

In contrast, intensity levels, which generally rose between 1974 and 1976 did not fall below 1974 levels following the fee increase, and in some specialties, continued to rise. Thus, increases in service intensity are either less likely to be reversed, or less tightly linked to changes in fee policies. The changes in the composition of the Medicaid population, particularly between 1976 and 1978, could certainly be cited as another source of change in service intensity.

#### Patients Per Provider

The average number of patients per provider in 1974 show large variations by specialty, and is inversely related to the degree of specialization. As Table 12 indicates, general practitioners and pediatricians saw the most patients, general and orthopedic surgeons the fewest. As expected, the groups saw more patients than solos.

Between 1974 and 1976 the number of patients per provider increased for most practitioners. The increases were larger for groups than solos for obstetricians, pediatricians and orthopedic surgeons while the reverse was true for the other specialties.





Table 12  
Patients per Participating Provider  
by Specialty, Year, and Type of Practice

Specialty	1974 Levels		1976 Indices (Levels in Parentheses)		1978 Indices (Levels in Parentheses)	
	Groups	Solos	Groups	Solos	Groups	Solos
General and Family Practice	344.9	71.7	1.15 (396.1)	1.28 (92.1)	1.63 (563.1)	1.68 (120.8)
General Surgery	50.1	37.9	0.79 (39.8)	1.04 (39.6)	1.55 (77.5)	1.23 (46.5)
Internal Medicine	59.8	30.1	0.93 (55.5)	1.03 (31.0)	1.04 (62.0)	1.27 (38.1)
Obstetrics- Gynecology	111.0	53.0	1.49 (165.2)	1.16 (61.6)	2.37 (262.7)	1.26 (66.5)
Pediatrics	226.9	115.0	1.41 (318.9)	1.31 (150.2)	3.15 (715.6)	1.63 (187.7)
Orthopedic Surgery	46.5	19.3	1.08 (50.2)	0.89 (17.1)	1.29 (59.7)	1.34 (25.9)



Pediatrics exhibited the largest specialty-wide increases in patients per provider with increases of 41 percent for group and 31 percent for solo physicians. Patient counts increased 15 percent (groups) and 28 percent (solos) for general practitioners. In obstetrics-gynecology the increases were substantially larger for groups (49 percent) than for solos (16 percent).

The 1978 indices show that across-the-board increases in patient counts occurred between 1976 and 1978. With the exception of internists, the increases were again larger for groups than solos, perhaps due in part to an increase in average group size and to an expansion of the practices of new groups in the sample. Relative to 1974, the increases were largest in pediatrics and obstetrics-gynecology. The patient counts for group pediatricians and group general practitioners were all above 500 in 1978, indicating the development of large Medicaid practices.

In contrast to the 1974-76 period, patient counts in the surgery specialties showed substantial increases between 1976 and 1978 despite the fact that surgical specialties benefited least from the fee increase. This observation suggests again that fee policy was not the only factor affecting practice patterns during the study period. Both the eligible population and physician population ratios increased, particularly between 1976 and 1978. The number of eligible patients increased faster than the number of physicians practicing, implying that Medicaid demand was rising while non-Medicaid demand per physician was probably falling. Therefore, it is not as surprising to see patient loads increasing during the fee freeze, and in specialties that received relatively small fee increases.



### Participation Rates

The statistics on services per patient and patients per provider presented above relate only to those providers participating in Medicaid. To complete our description of the changes in service volume we must also provide information on participation rates. In order to obtain accurate rates for the group practices, which changed in number between 1974 and 1976, the group rates were determined by inspecting the patient counts for the provider number or numbers linked with each unique group. A group was deemed a participant if at least one patient billing appeared for its billing number(s). The same definition of participation was used to calculate the solo rates.

Because groups include more than one doctor, one would expect their participation rates to be higher. Table 13 demonstrates that this is indeed the case. Group participation rates ranged from 79.4 percent to 100.0 percent in 1974. In the same year, solo rates ranged from 62.3 percent to 86.8 percent. Participation rates for groups were highest in pediatrics and orthopedic surgery and lowest in internal medicine and general practice. Participation rates for solos were also high in orthopedic surgery, but in contrast to the groups, the lowest solo rates were observed in pediatrics.

In 1976, participation rates ranged from 91 to 107 percent of 1974 levels, and hence changed less than any of the variables examined above. Participation rates of groups increased more or decreased less than those of solo physicians, with the sole exception of pediatricians. The changes in intensity-adjusted allowed amounts discussed above indicated that some low fee providers ceased to participate, but the participation rates indicate that the numbers doing so were relatively small.

Between 1976 and 1978 the participation rates of groups and solos tended to move in opposite directions. Participation rates of groups continued to



Table 13

Medicaid Participation Rates (Percent)  
by Specialty, Year, and Type of Practice

Specialty	1974		1976		1978	
	Groups	Solos	Groups	Solos	Groups	Solos
<u>General &amp; Family Practice</u>						
Levels	83.3	70.0	85.7	69.2	85.7	62.1
Indices			1.03	0.99	1.03	0.89
N	96	253	112	253	112	253
<u>General Surgery</u>						
Levels	79.4	72.7	85.3	73.5	84.4	70.4
Indices			1.07	1.01	1.04	0.97
N	34	128	34	128	34	128
<u>Internal Medicine</u>						
Levels	84.4	71.3	86.5	67.7	91.0	65.2
Indices			1.02	0.95	1.08	0.91
N	64	247	89	247	89	247
<u>Obstetrics-Gynecology</u>						
Levels	83.3	77.6	81.7	71.5	85.0	63.3
Indices			0.98	0.92	1.02	0.82
N	48	49	60	49	60	49
<u>Pediatrics</u>						
Levels	100.0	63.9	92.6	66.7	81.5	69.5
Indices			0.93	1.04	0.82	1.09
N	17	36	27	36	27	36
<u>Orthopedic Surgery</u>						
Levels	97.1	86.8	91.2	78.9	97.1	73.6
Indices			0.94	0.91	1.00	0.85
N	34	38	34	38	34	38

N = Number of unique groups or solos in each cell.





increase (with a few exceptions). For solos the trend was reversed and most rates fell. As a result of these changes, 1978 group rates ranged from 81.5 percent to 100 percent. Those for solos were between 62.1 percent and 86 percent, a range nearly identical to that observed in 1974. A comparison of the changes in rates by specialty suggests that the fee increase had no lasting effect on participation rates.

#### D. Overview and Summary

This section uses aggregate statistics to outline the major changes in the composition and volume of Medicaid services provided during the study period. The indices presented are weighted averages which allow us to decompose changes in expenditures as follows:

$$IEXP = IPRICE * IPROV * IPAT * ISERV$$

where IEXP = indexed total expenditures,  
 IPRICE = indexed average allowed amounts,  
 IPROV = indexed number of providers,  
 IPAT = indexed patients per provider,  
 and ISERV = indexed service per patient.

The IPRICE values are weighted by the number of services and those for ISERV by the number of patients. That is, a change in service provision in a large practice counts more than a similar change in a small practice. These indices, therefore, reflect changes observed at the program level rather than at the level of an individual practice.



The use of aggregate indices allow us to determine the relative importance of the four components of change in total expenditures. The condensed form also facilitates the identification of differences between groups and solos. The aggregate statistics are presented in Table 14.

In 1974, average prices ranged from a little more than \$8 in pediatrics to more than \$50 in general surgery groups. Prices were higher for group physicians in four specialties -- general surgery, obstetrics-gynecology, internal medicine and pediatrics. The price differences can most often be explained by differences in the complexity of services delivered.

The number of services provided per patient varied inversely with the degree of specialization, as did the number of patients treated. Group practitioners saw more patients than solos, and had higher participation rates. Except for the two surgical specialties, groups also provided more services per patient. The initial differences between groups and solos may reflect differences in the nature of the population served as well as differences in practice patterns.

Between 1974 and 1976 total revenues increased only for the primary care specialties. Revenues for the sample groups increased by 65 percent for general practitioners, 70 percent for internists, 124 percent for pediatricians and 88 percent for obstetricians. Increases in the number of patients per group or solo physician were in general the greatest contributors to increases in revenues. For example, among groups, patients per provider increased by 15 percent for general practitioners, 49 percent for obstetricians and 41 percent for pediatricians.

Despite the freeze on fees, average prices rose for pediatricians and general practitioners. The price increases were due to increases in service complexity, and to a lesser extent due to changes in the pool of providers.



Table 14

## SUMMARY OF GROWTH IN MEDICAID

	1974 Levels		1976 Indices		1978 Indices	
	Groups	Solos	Groups	Solos	Groups	Solos
			(1974 = 1.00)		(1974 = 1.00)	
<u>Specialty</u>						
<u>General and Family Practice</u>						
Price per Service	\$7.89	\$8.64	1.21	1.15	1.34	1.36
Participating Providers <sup>1</sup>	89.00	177.00	1.22	0.99	1.17	0.89
Patients per Provider	344.89	71.72	1.15	1.28	1.63	1.68
Services per Patient	4.18	3.37	0.97	1.12	0.76	0.84
Total Expenditures	\$1,013,222	369,604	1.65	1.64	1.94	1.70
<u>General Surgery</u>						
Price per Service	50.39	21.92	0.51	0.98	0.65	1.17
Participating Providers	30.00	93.00	1.07	1.01	1.10	1.97
Patients per Provider	50.13	37.93	0.79	1.04	1.55	1.23
Services per Patient	2.58	3.13	1.70	0.96	1.29	0.81
Total Expenditures	\$ 195,253	242,387	0.74	0.99	1.42	1.13
<u>Internal Medicine</u>						
Price per Service	13.49	12.61	0.97	1.00	1.14	1.18
Participating Providers <sup>1</sup>	58.00	176.00	1.36	0.95	1.47	0.91
Patients per Provider	59.79	30.11	0.93	1.03	1.04	1.27
Services per Patient	4.18	3.36	1.38	1.34	1.24	1.06
Total Expenditures	\$ 195,411	224,749	1.70	1.31	2.14	1.44
<u>Obstetrics and Gynecology</u>						
Price per Service	34.49	30.75	0.81	1.06	0.97	1.14
Participating Providers <sup>1</sup>	45.00	38.00	1.18	0.92	1.27	0.82
Patients per Provider	111.02	52.97	1.49	1.16	2.37	1.26
Services per Patient	2.25	2.70	1.32	0.91	0.92	0.68
Total Expenditures	\$ 388,069	167,141	1.88	1.03	2.69	0.79
<u>Pediatrics</u>						
Price per Service	8.82	8.32	1.34	1.30	1.31	1.60
Participating Providers <sup>1</sup>	18.00	23.00	1.61	1.04	1.44	1.09
Patients per Provider	226.89	115.00	1.41	1.31	3.15	1.63
Services per Patient	5.49	4.50	0.74	0.85	0.53	0.62
Total Expenditures	\$ 197,615	99,045	2.24	1.50	3.18	1.76
<u>Orthopedic Surgery</u>						
Price per Service	25.42	28.32	0.85	0.93	1.24	0.89
Participating Providers	40.00	33.00	0.90	0.91	0.90	0.85
Patients per Provider	46.45	19.30	1.08	0.89	1.29	1.34
Services per Patient	2.69	2.80	1.11	0.99	1.06	1.09
Total Expenditures	\$ 127,244	50,488	0.92	0.74	1.53	1.10

NOTE: 1. 1976 and 1978 indices are not adjusted for the increase in sample size between 1974 and 1976.



Similar changes, but in the opposite direction occurred in the surgical specialties. A decline in service intensity is reflected in lower average prices.

A third source of increased revenues was the increase in the number of services per patient. With a few exceptions, services per patient increased faster for groups than solos. For many practitioners the changes in service intensity and services per patient were offsetting, limiting the change in revenue per patient. Finally, participation rates rose during the 1974-1976 period. Group rates grew faster and continued to be higher than solo physicians'.

Between 1976 and 1978, average allowed amounts rose for all physicians. The price increases reflect the fee increase and are higher in the primary care specialties which benefited most. Changes in service complexity both raised and lowered the price per service indices. The number of patients treated continued to rise rapidly, especially in obstetrics-gynecology and pediatrics. The increases were generally larger for groups but not always. The number of patients seen by groups was also augmented by continued increases in participation rates. Participation rates for solos in four specialties fell below levels observed in 1974.

In contrast to the earlier period, the numbers of services per patient fell substantially after the fee increase, and were below 1974 levels in general practice, general surgery, obstetrics-gynecology and pediatrics. It appears that physicians spread their services across a larger number of patients, with each receiving fewer treatments. The increases in patient loads were highest in pediatrics and obstetrics-gynecology, the specialties that benefited most from the fee increases.





Throughout the study period expenditure increases derived more from increases in the number of patients seen than from the cost of serving individual patients. The difference is particularly notable for the group practices as shown in Table 15.

The changes in patients per provider and participation rates are combined to produce the total change in the number of patients. The changes in cost per patient represent the combined effects of changes in allowed amounts and in services per patient. For groups, the 1974-76 changes in the number of patients includes the effect of adding new groups to the sample. Although group size is not held constant, the increases in the number of patients treated by group practitioners are still striking. These results suggest that the share of the Medicaid population served by group practitioners increased during the study period. This possibility provides an added incentive for noting the differences between groups and solo practitioners.

As Table 15 shows, the changes over time in the cost per patient are not related to group or solo practice. Group practice prices remained higher than those of solos, as did their participation rates. The differences in patients per provider and services per patient increased over time, resulting in higher values for groups than solos for both variables. In short, groups provide more services at higher prices than solos.

The most important conclusion to be drawn from the 1974-76 changes is that the freeze on fees did not adversely affect Medicaid patient's access to health care. The influence of factors affecting non-Medicaid demand such as the rising physician-population ratios and perhaps the rise of unemployment rates in 1975 served to counteract the disincentives provided by the declines in the proportion of billed amounts reimbursed by Medicaid. Physicians were willing to provide Medicaid services to the growing eligible population. It



Table 15

COMPARISON OF CHANGES IN PROGRAM EXPENDITURES DUE TO  
CHANGES IN NUMBER OF PATIENTS SERVED (NP) AND  
CHANGES IN COST PER PATIENT (CPP), 1974-1978

		Percent Change 74-76		Percent Change 76-78		Percent Change 74-78	
		Groups	Solos	Groups	Solos	Groups	Solos
<u>Specialty</u>							
General and Family Practice	NP	40	27	36	18	91	50
	CPP	17	29	-13	-12	2	14
General Surgery	NP	-15	5	101	-6	71	19
	CPP	-13	6	-3	1	-16	-5
Internal Medicine	NP	26	-2	21	18	53	16
	CPP	34	34	5	-7	41	25
Obstetrics and Gynecology	NP	76	7	33	-4	201	3
	CPP	7	-4	-17	-21	-11	-24
Pediatrics	NP	127	36	100	31	354	78
	CPP	-1	10	-30	-10	-31	-1
Orthopedic Surgery	NP	-3	-19	20	41	16	14
	CPP	-6	-8	39	5	31	-3



is unclear whether the increases in services per patient reflect physician-induced demand or changes in the patients' needs.

Finally, service complexity rose throughout the study period. To some extent this change may be attributable to changes in the needs of patients served. The disabled share of the Medicaid population increased over time and the newly eligible medically indigent patients may have needed more intensive services as a result of their previous inability to pay for medical care. Nonetheless, low fee levels do provide physicians with an incentive to bill for more complicated services, whether or not they actually change the composition of services delivered.





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